

2 c
5

JPRS: 4210

21 November 1960

BICILLIN IN VARIOUS TYPES OF COMPLEX THERAPY
AND PROPHYLAXIS OF ACUTE RADIATION SICKNESS IN DOGS

By N. V. Rayeva
and
I. N. Usacheva

-USSR-

Reproduced From
Best Available Copy

DISTRIBUTION STATEMENT A
Approved for Public Release
Distribution Unlimited

19990730 072

Distributed by:

OFFICE OF TECHNICAL SERVICES
U. S. DEPARTMENT OF COMMERCE
WASHINGTON 25, D. C.

U. S. JOINT PUBLICATIONS RESEARCH SERVICE
1636 CONNECTICUT AVE., N.W.
WASHINGTON 25, D. C.

3

FOREWORD

This publication was prepared under contract by the UNITED STATES JOINT PUBLICATIONS RESEARCH SERVICE, a federal government organization established to service the translation and research needs of the various government departments.

ATTEMPTING TO IDENTIFY
THE SOURCE OF THE
INFORMATION CONTAINED
HEREIN IS NOT
RECOMMENDED

JPRS: 4210

CSO: 1126-S/f

BICILLIN IN VARIOUS TYPES OF
COMPLEX THERAPY AND PROPHY-
LAXIS OF ACUTE RADIATION
SICKNESS IN DOGS

-USSR-

[Following is the translation of an article entitled "Bitsillin V Razlichnykh Variantakh Kompleksnoi Terapii i Profilaktike Ostroi Luchevoi Bolezni u Sobak" (English version above) by N.V. Raeva, I.N. Usacheva in Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya (Pathological Physiology and Experimental Therapy), Vol IV, No 4, Moscow 1960, page 74.]

Bicillin was tested on dogs which were exposed to external roentgen (600 gamma doses) and gamma (in doses of 350, 400, 600 gammas) radiation.

The preparation was used against a background of complex therapy (in eight dogs), and in some of the experiments it was used in conjunction with streptomycin and chlorotetracycline -- in treatment experiments (12 dogs), and in prophylactic treatment (24 dogs). With a therapeutic aim, bicillin was given in intramuscular injections of 600,000 units once every five days, from the first to the twentieth day. Streptomycin, also administered by intramuscular injection, was given twice daily, 300,000 units at a time beginning with the second day, or 250,000 units twice daily beginning with the sixth to the nineteenth day. These two experiments in complex therapeutic substances included a 40% glucose solution, a 5% ascorbic acid solution, blood transfusions, vitamins (see below), and supplementary feeding.

In the prophylactic treatment, bicillin was administered in doses of 500,000 units 24 hours before exposure to radiation, and henceforth once every five days after radiation up to the twentieth day. Streptomycin (simultaneously with bicillin) was administered internally in doses of 300,000 units twice daily from the first day

to the twentieth. In this experiment, in addition to the antibiotics, vitamins (C, B₁, B₆, B₂, PP, P, A, D) were administered as well as supplementary feeding.

All control dogs died in the course of ten to thirteen days. In the treated group of dogs, two survived -- one with the curative adaptation of bicillin with streptomycine, and the other with the prophylactic-treatment method. The remaining dogs died after an average life prolongation of 14 to 18 days. This meager positive effect we must attribute to the simultaneous time and place of administration of bicillin and streptomycine, since in the control experiments, by injection of streptomycine alone against a background of the same complex of curative substances (16 dogs), the life span was prolonged by only two and a half days.

In the last experiment (14 dogs), bicillin was tested in combination with chlorotetracycline, injected intramuscularly, and with penicillin irrigation of the mouth. Besides this, we gave demarol orally and strychnine hypodermically. The dogs undergoing treatment received the above-mentioned series of vitamins. Bicillin (500,000 units) was administered 18 hours before radiation exposure. It was subsequently given on the fourth, the eighth, the twelfth, the sixteenth, and the twentieth day after radiation. Chlorotetracycline with novocaine and ecmoline was given in doses of 30 milligrams twice daily on the first, the third, the fifth, the seventh, the ninth, the eleventh, the thirteenth, the fifteenth, the seventeenth, and the nineteenth day after radiation exposure. Irrigating with penicillin was done once daily from the second to the twentieth day. The control dogs were given a physiological solution (intramuscularly and subcutaneously) on those days when the experimental animals received antibiotics or strychnine. Of eight experimental animals, two survived. The others (6) died in the same period as did the controls. Hemorrhage diathesis was less acute in the treated group of dogs.

In all the experiments with exception of the final one, with the bicillin test the changes in the individual indices of peripheral blood (erythrocytes, leucocytes, ROE) were somewhat less pronounced in treated dogs than in the control group.